IN THE CLAIMS

The pending claims are set forth below:

Listing of Claims

1. (Currently Amended) A system for providing service in a wireless local area network comprising:

   [[i.]] a single or plurality of wireless access points (WAP) for ~~capable of~~ processing a subset of complete functionality defined for the wireless local area network;

   [[ii.]] a single or plurality of control nodes (CN) for ~~capable of~~ providing a subset or complete functionalities defined for the wireless local area network; and

   [[iii.]] a negotiation unit ~~means~~ for the single or plurality of WAPs ~~wireless access points~~ to dynamically negotiate with the control node for a secure connection ~~connections~~ and function split arrangement;

   whereby~~, in use,~~ the control node negotiates ~~would negotiate~~ with the single or plurality of WAPs using the negotiation unit ~~means~~ and provides ~~provide same or different~~ complementary functionality for the single or plurality of ~~each of~~ the WAPs to form a complete functionality defined for the wireless local area network according to a decision of the negotiation unit ~~means~~.

2. (Currently Amended) The system according to claim 1, wherein said WAPs ~~wireless access point~~ and CNs ~~control nodes~~ further comprise logically independent functional components of the functionalities defined for the wireless local area network with predefined interfaces ~~interface~~ used between each functional components.

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3. (Currently Amended) The system according to claim 2, wherein said predefined interfaces used between said functional components are could be used over remote connections between said WAPs wireless access point and said CNs control node.

4. (Currently Amended) The system according to claim 1, wherein each of said CNs control node further comprises a control node controller module and each of said WAPs wireless access point further comprises a wireless access point controller module.

5. (Currently Amended) The system according to claim 4, wherein the controller module of said CN control node further comprises a single or plurality of processing schedules comprising composed of sequential lists of descriptors for subsets of said functional components used for each wireless access point.

6. (Currently Amended) The system according to claim 4, wherein the controller module of said WAP wireless access point further comprises a single or plurality of processing schedules each comprising composed of sequential lists of descriptors for subsets of said functional components used for each associated mobile terminal.

7. (Currently Amended) The system according to claim 1, wherein each of the WAPs wireless access point further comprises:

   [[i.]] a discovering unit means for discovering an the available CN control node within a specified domain; and

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[[ii.]] a secure connection negotiating unit ~~means~~ for negotiating a secure connection with a CN ~~control node~~ that may provide the complementary functionality ~~could offer the desired functions~~ desired by the WAP;

whereby~~, in use,~~ the WAP ~~wireless access point~~ locates ~~is able to locate~~ the CN ~~control node~~ that provides the necessary complementary functionality ~~functionalities~~ with regard to ~~a set of~~ defined complete wireless local area network functions with the ~~means for~~ discovering unit and establishes a ~~establishing~~ secure connection with the CN that provides the complementary functionality ~~control node~~ with the ~~means for~~ secure connection negotiating unit.

8. (Currently Amended) The system according to claim 1, wherein the controller module of said CN generates ~~control node is capable of generating~~ a data unit which resembles a data unit of ~~to resemble that from~~ a mobile terminal.

9. (Currently Amended) A system for providing service ~~load balancing~~ in a wireless local area network (WLAN) ~~without requiring association handover at a mobile terminal~~ comprising:

[[i.]] a single or plurality of mobile terminals, each of said mobile terminals ~~terminal~~ associated with and receiving services from a single or plurality of wireless access points ~~point~~ (WAP);

[[ii.]] a single or plurality of WAPs to process ~~wireless access point that are capable of processing~~ data units received from the single or plurality of mobile terminals ~~terminal~~ or the single or plurality of WAPs ~~other wireless access point~~ using a subset of defined WLAN functions; and

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[[iii.]] an exchanging unit ~~means~~ for the WAPs ~~wireless access points~~ to exchange data units processed with a subset of ~~or complete defined~~ WLAN functions;

wherein each of the WAPs further processes the processed data units received from other WAPs with complementary functionality among the subset of defined WLAN functions, and

whereby a data unit for a mobile terminal is processed with complete WLAN functions by a ~~single or~~ plurality of said WAPs ~~where each WAP processes the data unit with only a subset of complete WLAN functions~~.

10. (Currently Amended) The system according to claim 9, wherein each of the WAPs ~~wireless access point~~ further comprises a control module for ~~that is capable of~~ negotiating with other of said WAPs ~~wireless access points~~ for a subset of the complete WLAN functions to be carried out at each of said WAPs ~~wireless access point~~.

11. (Currently Amended) The system according to claim 9, wherein each of the WAPs ~~wireless access point~~ further comprises ~~comprising~~ a local database that stores all ~~the~~ associations of the mobile terminals attached to said WAP ~~wireless access point~~ and a corresponding subset of the complete WLAN functions to be provided to the mobile terminals ~~terminal~~.

12. (Currently Amended) The system according to claim 1, wherein the functionalities of said WAP and CN are collocated ~~collocate~~ in a single network element.

13. (Currently Amended) A method for providing service in a wireless local area

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network (WLAN) that allows a defined WLAN function split between a wireless access point (WAP) and a single or plurality of Control Nodes ~~Node~~ (CN) comprising the steps in which:

[[i.]] a the WAP discovers the CNs ~~CN~~ that may provide complementary WLAN functions by sending a single or plurality of messages containing information about a ~~its own~~ subset of WLAN functions of the WAP to all of the CNs in the plurality of CNs ~~CN~~;

[[ii.]] ~~a CN~~ after receiving said discover message, at least one of the CNs replies with a single or plurality of messages containing information about a subset of WLAN functions said CN has available for ~~could offer to~~ the WAP; and

[[iii.]] said WAP chooses from all the replied CNs a proper CN based on local policy and establishes an association with said chosen CN.

14. (Currently Amended) The method according to claim 13, wherein the choosing of the proper CN by said WAP comprises choosing the proper CN ~~for the WAP to decide which CN to use according to claim 13~~ using information, the information comprising:

i. the subset of the WLAN functions offered by the CN;

ii. a cost of using the CN;

iii. a vendor of the CN;

iv. ~~a~~ characteristics of a ~~the~~ connection to the CN; and

v. a weighted sum of the above factors.

15. (Currently Amended) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between wireless access point (WAP) and a single or plurality of Control Nodes ~~Node~~ (CN) comprising the steps in which:

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[[i.]] a CN dynamically discovers a the capability of a WAP by sending a single or plurality of messages to the a WAP, each of the messages containing a section that emulates a data unit sent by a mobile terminal;

[[ii.]] the a WAP receives at least one of said messages message, processes said section using a the same procedure for processing data units received from the a mobile terminal and sends another data unit back to said CN in a reply message; and

[[iii.]] said CN obtains the capability information of said WAP by examining the processed data unit units in said reply message.

16. (Currently Amended) A method for providing service in a wireless local area network (WLAN) that allows a defined WLAN function split between a wireless access point (WAP) and a single or plurality of Control Nodes Node (CN) comprising the steps in which:

[[i.]] a CN obtains a obtaining capability of the WAP; and

[[ii.]] said CN negotiates negotiating with another CN one or a plurality of other CNs for the supplementary WLAN functions to be provided to the WAP.

17. (Currently Amended) A method for carrying out load balancing in a wireless local area network (WLAN) without requiring a mobile terminal to change an association relationship with a wireless access point (WAP) comprising the steps in which:

[[i.]] the WAP separates a the processing function provided to the mobile terminal into an association specific part and a non-association specific part;

[[ii.]] said WAP negotiates with another WAP regarding of the non-association specific part and establishes a secure tunnel with said another WAP;

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[[iii.]] said WAP tunnels a the data unit from a mobile terminal to the said another WAP through the tunnel after processing said data unit with functions of the association specific part of functions; and

[[iv.]] said another WAP receiving the processed data unit through said tunnel processes said data unit and processing it with functions of the non-association specific part of functions.

18. (Currently Amended) The method according to claim 17 further comprising a the step in which said WAP uses a wireless channel to establish a direct connection with said another WAP and sets up said secure tunnel over the direct connection.

19. (Currently Amended) The method according claim 17 further comprising a the step in which the WAP decides on whether to tunnel said data unit from the mobile terminal to said another WAP for said non association specific processing by monitoring a the load at said WAP and comparing it with a preset threshold value.

20. (Currently Amended) The method according to claim 17 further comprising a the step in which said WAP decides on which other WAPs should be used for said non association specific processing by monitoring the loads at said other different WAPs said WAP it has connections with and compares said loads them with a preset threshold value.

21. (Currently Amended) The method according to claim 17 further comprising the step in which a central control entity monitors a the load status on all WAPs within a certain domain and mandates distribution of said non-association specific processing functions function between

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different WAPs <u>from among said all WAPs</u>.

22. (Currently Amended) The method according to claim 17 for the WAP to determine <u>a</u> ~~the~~ distribution of <u>said</u> non-association specific <u>processing functions</u> ~~function~~ based on information, the information comprising:

[[i.]] a size of the data unit to be processed;

[[ii.]] an expected average time for the processing of the data unit;

[[iii.]] an overhead time for <u>the</u> processing <u>of</u> the data unit; and

[[iv.]] a weighted sum of <u>the</u> above factors.

23. (Currently Amended) A method for providing service in a wireless local area network (WLAN) that allows <u>a</u> defined WLAN function split between <u>a</u> wireless access point (WAP) and a single or plurality of Control <u>Nodes</u> ~~Node~~ (CN) comprising the steps in which:

[[i.]] a subset of WAPs processes <u>a</u> ~~the~~ total of its subset of functionality defined for the WLAN; ~~and~~

<u>the WAP dynamically negotiates with a CN for a secure connection and function split arrangement; and</u>

<u>the</u> ~~ii.~~ a CN provides <u>complementary functionality for each of the WAPs to form a complete functionality defined for the wireless local area network according to a decision in the negotiation step</u> ~~distinct subsets of complementary functionality defined for the WLAN to each of the subset of WAPs~~.

24. (Cancelled)

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25. (Currently Amended) A method for accommodating variances in a wireless network topology comprising a ~~the~~ step of dynamically adapting an ~~the~~ operations logic of at least one network entity of said wireless network topology to alter processing of one or more functional sub-components.

26. (Currently Amended) The method according to claim 25 further comprising a ~~the~~ step of altering ~~the~~ processing of selected functional sub-components at the at least one network entity by ~~means of~~ bypassing said processing of said selected functional sub-components.

27. (Currently Amended) The method according to claim 25 further comprising a ~~the~~ step of altering ~~the~~ processing of a selected functional sub-components at the at <u>least</u> one ~~or more~~ network entity by ~~means of~~ selectively processing said selected functional sub-components.

28-30. (Cancelled)

31. (Currently Amended) A method for determining a topology of a wireless network, wherein a first network entity alters <u>a</u> connectivity association with a second network entity by including one or more third network entities in a ~~the~~ communication path of <u>an</u> ~~the~~ alternate connectivity association, comprising the steps of<u>:</u>~~;~~

exchanging information on neighbouring network entities among said network entities of said wireless network;

analyzing communication frames received by said network entities based on pre-

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established representations of <u>said</u> topology of said wireless network; <u>and</u>

analyzing association request frames received by said network entities based on <u>said</u> pre-established representations of <u>said</u> topology of said network.

32. (Currently Amended) A wireless access point (WAP) in a wireless local area network (WLAN) that allows a defined WLAN function to be split between the wireless access point (WAP) and one or more Control Nodes (CNs), the WAP comprising:

a discovery function which initiates a discovery operation to discover a Control Node (CN) among said one or more CNs that may complement said WAP with respect to providing said defined WLAN function by sending a plurality of discover messages containing information about its own subset of the defined WLAN function, to the one or more CNs;

a receiving function which receives one or more reply messages from said one or more CNs in response to said discover <u>messages</u> ~~message~~, said one or more reply messages including information about a subset of the defined WLAN function, said one or more CNs <u>have available for</u> ~~could offer to~~ the WAP;

a choosing function which chooses from among said one or more CNs that sent said one or more reply messages a particular CN based on local policy.